

What is claimed is:

1. An analytical method of analyzing blood using near infrared spectroscopy comprising the steps of:
- (a) applying light through a blood collection receptacle to a sample of the blood
5 contained in the receptacle;
- (b) detecting at least one of diffusely reflected light and diffusely transmitted light from the blood sample in the blood collection receptacle by an optical sensor to measure a near infrared absorption spectrum of the blood sample; and
- (c) modifying the measured spectrum using a calibration equation which has been
10 determined in advance from a spectrum measured using the steps (a) and (b) relative to blood specimens with known object characteristics, thereby determining an object characteristic of the blood sample.
2. The analytical method of analyzing blood according to claim 1, wherein the wavelength of near infrared light applied to the blood in the blood collection receptacle
15 is 700nm - 1100nm.
3. The analytical method of analyzing blood according to claim 1, wherein the calibration equation is determined using a chemometrics technique multiple linear regression (MLR), principal component regression (PCR) and PLS regression.
4. An analytical apparatus for analyzing blood comprising:
- 20 a block provided with a housing portion for a translucent blood collection receptacle;
- a near infrared apparatus provided with a spectroscope for dispersing near infrared light from a light source or from a sample of blood contained in the blood collection receptacle and an optical sensor for detecting the near infrared light;
- 25 light conduction means for conducting the near infrared light emitted from the light source or the spectroscope to the blood collection receptacle within the housing portion and for conducting, directly or through the spectroscope, at least one of diffusely reflected light and diffusely transmitted light from the blood sample within the blood collection receptacle to the optical sensor; and
- 30 control means for outputting a measured spectrum of the blood sample to the near infrared apparatus and for modifying the measured spectrum using a calibration equation which has been determined in advance, for thereby computing an object characteristic of the blood sample.

5. The analytical apparatus for analyzing blood according to claim 4, wherein a white light source is used as the light source, and a diode array is used as the optical sensor.

5 6. The analytical apparatus for analyzing blood according to claim 4, wherein monochromatic near infrared light is used as the light source, and a silicon detector or a lead sulfide detector is used as the optical sensor.

7. The analytical apparatus for analyzing blood according to claim 4, wherein the light conduction means comprises an optical fiber.

10 8. The analytical apparatus for analyzing blood according to claim 4, wherein the block is provided with a temperature control means for stabilizing the blood sample within the blood collection receptacle at a predetermined temperature.

9. The analytical apparatus for analyzing blood according to claim 4, wherein the calibration equation is determined in advance using the near infrared apparatus in relation to a plurality of blood specimens with different, known object characteristics.

15 10. The analytical apparatus for analyzing blood according to claim 4, wherein the blood collection receptacle is a tube or bag.

11. The analytical apparatus for analyzing blood according to claim 4, wherein the light conduction means comprises an optical fiber bundle.

20 12. The analytical method of analyzing blood according to claim 3, wherein the chemometrics technique involves at least one of multiple linear regression (MLR), principal component regression (PCR) and PLS regression.

13. The analytical method of analyzing blood according to claim 1, wherein the translucent blood collection receptacle is a tube or bag.